

REMARKS

This Amendment is in response to the non-final Office Action of August 22, 2007 in which claims 1-25 were rejected and claim 6 objected to.

Regarding the objection to claim 1, there does not appear to be missing any kind of transitional phrase of use of correct grammar between “peripheral device” and “which one or more” in the claim. However, the applicant has amended claim 1 to cancel the word “which” and substitute the word --said-- and has cancelled the phrase “is itself or are themselves” and has substituted therefor the word --being--. The phrase “which one or ones of” has also been cancelled. It is believed that this amendment makes it clear that the claimed step of detecting in the electronic device comprises detecting one or more indirect indicators formed in the peripheral device, said one or more indirect indicators being only indirectly indicative of said less width or widths available for use in the peripheral device. The previously cancelled word “are” between “widths” and “available” in line 9 of the previous amendment to claim 1 repeats the phraseology in line 5 where the use of the word “are” would be inappropriate although “that are” might work but is unneeded. Withdrawal of the objection to claim 1 is requested.

The extensive § 112, second paragraph, rejection of claims 1-25 will now be addressed.

With regard to claim 1, the preamble of the claim has been amended to make it clear that the method is carried out in an electronic device. The first step of detecting has been amended to make it clear that the detecting is in said electronic device. Regarding lines 11-12, the claim has been amended to make it clear that after the detecting step the electronic device then selects from said bus width or widths a detached bus width for using said peripheral device in said operating mode. The last phrase appearing in the previous version of claim 1, i.e., “according to the selected bus width” has been cancelled.

The definite article “the” in “the peripheral device” in line 6 has been changed to the indefinite article --a--. The definite article “the” in “the peripheral

device” in lines 9-10 has been retained because it refers back to the same peripheral device introduced by the indefinite article introduced in line 6 by amendment. The Examiner is evidently objecting to the phrase “said peripheral device” in line 11 of claim 1 because it is not consistent with the use of the definite article “the” in line 6 and again in line 9. The definite article “the” has been cancelled from line 6 and the indefinite article substituted therefor. The word “said” in line 11 has been changed to --the-- in order to be consistent with the use of the word “the” in line 9. It is believed this inconsistency has now been corrected and withdrawal of the objection to claim 1 is requested.

Regarding claim 9, the recitation of “said reference data” in line 8 has now been provided with antecedent basis by changing the dependency of claim 8 to claim 2 instead of claim 1. Claim 2 has the antecedent. Withdrawal of the rejection of claim 9 is requested.

Claims 2-9 have been reviewed for consistency with the changes to claim 1 and therefore claim 7 has been amended to refer to “said” one bus, referring back to the amendment to claim 1 where the selecting step has been clarified by making it clear that one bus width is selected from the bus width or widths. As mentioned, claim 8 has changed its dependency from claim 1 to claim 2. Claim 9 has been amended extensively to recite positive steps and to make the relation to the steps recited in claim 1 clearer. Withdrawal of the indefiniteness rejection of claims 1-9 is requested.

Regarding claim 10, the phrase “which one or ones from said set of bus widths are available” has been revised to read --said bus width or widths available-- so as to remove the possibility of possibly referring back to a plurality of sets. Claim 10 has also been amended to cancel the phrase “which one or more indirect indicators is itself or are themselves” and this cancelled phrase has been replaced with the word --being--. Withdrawal of the indefiniteness rejection of claim 10 is requested.

Regarding independent claim 11, it also has been amended extensively according to the Examiner’s comment about “the detector” in lines 4-5 and in other places to clarify the claim. The phrase “bus width detector” appears in line 1 of claim 11 and the phrase “the detector” in lines 4-5 has been amended to read --the

bus width detector-- so as to be completely consistent with the "bus width detector" appearing in line 1 of claim 11. The word "on" in line 4 has been changed to --in-- to correct an error. The phrase "the value" in line 5 has been changed to --a value-- to correct an antecedent basis problem. The word "which" in line 6 has been cancelled and the word --said-- substituted therefor. The phrase "is itself or themselves" has been cancelled and the word --being-- substituted therefor and the phrase "one or ones" in line 7 has been cancelled and the phrase --bus width or bus widths-- substituted therefor. Finally, the word "are" in line 8 of claim 11 has been cancelled and the phrase --is or are-- has been substituted therefor. Withdrawal of the indefiniteness rejection of claim 11 is requested.

Regarding claim 15, the phrase "of value" has been cancelled. Withdrawal of the indefiniteness rejection of claims 11-15 is requested.

Regarding claim 16 and its dependent claims 17-20, claim 16 has been amended in line 2 to change the definite article "the" modifying bus width to the indefinite article --a--. The phrase "which is itself or are themselves" in line 6 has been cancelled along with the phrase "which one or ones of" in order to enable the use of the word --being-- in their place which is a simpler way of saying the same thing. The phrase --at least one bus width from said defined-- has also been introduced to make the clear the antecedent basis. In claim 17 the definite article "the" modifying maximum clock frequency has been cancelled and the indefinite article substituted therefor. Withdrawal of the indefiniteness rejection of claims 16-20 is requested.

Regarding independent claim 21, the last three lines thereof have been amended extensively to remove the ambiguity with respect to the set of bus widths. Withdrawal of the indefiniteness rejection of claim 21 is requested. Regarding claim 22, it has been amended in a manner similar to the amendment to claim 16 to overcome the indefiniteness rejection. Withdrawal thereof is requested as well as that of claim 23 which depends from claim 22.

Claim 24 has been amended extensively to remove the reference to the defined set of bus widths and to clarify that the bus widths detector is for detecting a bus width or a plurality of bus widths of the peripheral device connected to the

electronic device. It is believed that this amendment overcomes the indefiniteness rejection. Withdrawal thereof is requested.

Regarding the novelty rejection, the “selection of a communication protocol described” in the SDMCS is not done with indirect indication as claimed but direct indication, as explained in the present specification and as is indicated in the portions of the SDMCS cited by the Examiner. The electronic device has to be capable of determining the bus width of the card connected to the electronic device. If the bus width is assumed or if it is detected to be incorrect in the electronic device, this will cause error situations and the card can probably not be used at all. In the SDMCS the memory card comprises a data bus which is either a one-bit data bus or a four-bit data bus. To maintain compatability of such card complying with newer specifications with the earlier versions, the card initialization steps are taken by using the data bus width of one bit by default. Thus, when starting the card, the card and the device to which the card is connected communicate on the one-bit data bus. After the electronic device exchanges a command and gets a response from the contents of the register holding the explicit information about the bus width, it can control the card to use another bus width if such a bus width is available, for example a four-bit bus. If the card or the electronic device does not support other bus widths, then the one-bit default data bus is continued in use. A card initialization command complying with the SDMCS is the ACMD 41 command which the electronic device transmits as an initialization command to the card. If the card responds to this command, it can be determined that the card is a card complying with the specification and explicitly with what bus width or widths, i.e., a direct indication.

So, the detection of the bus width is explicit with the electronic device querying with a command that the card send back the content of the register containing the explicit information needed by the electronic device to begin using the card according to its bus width available in an operating mode of the peripheral device.

Therefore, applicants do not see how it is possible for the Examiner to interpret the claim language in such a way as to make the statement that the selection between two protocol modes, i.e., the SD and SPI protocols, is indirectly indicative

of two distinct bus widths since this selection only takes place after the detection step in which the indirect indication is detected and only then is a detected bus width selected in the second step. Notice the use of the word “then” before the selecting step.

The internal logic of the Examiner’s position requires that the bus width be assumed which, if the assumption is incorrect in the electronic device, this will cause error situations and the card can probably not be used at all. See the present specification at page 2, line 24-26. Thus, it is contemplated by both the SDMCS and the present invention that the bus width or widths available for use are detected first, before selection. The difference between the prior art and present invention is that the present invention does not require use of memory space in a register of the peripheral device. It saves this memory space used by the prior art by instead detecting one or more indirect indicators formed in the peripheral device. The one or more indirect indicators are only indirectly indicative of the bus width or widths available for use in the peripheral device.

The equivalency seen by the Examiner between an “indirect indication” of a bus width by selecting an SD or SPI protocol requires the selecting step to go before deducing a particular bus width configuration. But this is not the way the actual SDMCS works and it is not the way the present invention is claimed.

An electronic device does not indirectly select either one of the one-bit wide bus or the four-bit wide bus in advance because it does not know the bus width of the peripheral device. It needs to find that out first. Then it makes its selection from the bus widths that are detected to be available.

The present invention does not do it the same way as contemplated by SDMCS because it does not need to consult any explicit indication of the available bus widths stored in a register on the peripheral device. Rather, it uses an indirect indicator and thereby permits the elimination of the register space previously used for the direct indication. Such a direct indication could for instance be contained in the prior art SCR register which is a SD Configuration Register containing information about the SD memory card’s special features capabilities. See Table 2 on page 16 of SDMCS.

The Examiner's arguments beginning with the sentence "If it was only shown ..." are founded on the idea that the card response to the host command is indicative of a mode and not of a bus width. The Examiner does not state where in the prior art this conclusion can be drawn from. As explained in the Background of the Invention section, beginning at page 2, line 20 and concluding at page 3, line 20, direct information about the data bus width supported by the card is stored by the prior art in each memory card. The electronic device can read this direct information and select a data bus width to be one supported by the card in question. One drawback in such an arrangement is that the storage of the bus width data requires memory space (registers) on the card.

It is not shown by the Examiner where the information about the card responding to the host command being indicative of a mode and not a bus width.

Therefore, it is not seen how the Examiner's arguments can be correct since all indications are that the prior art contemplates a direct indication of the bus width stored in a register in the peripheral device and does not contemplate the indirect indicator of the present invention.

Withdrawal of the novelty rejection of claims 1-5, 7-25 based on SDMCS is requested.

Regarding the *Okamoto et al* reference, the operation mode pointed to by the Examiner in paragraph [0057] on page 5 of the reference is a direct indicator of the bus widths in the selected operation transfer mode (see Fig. 6 of *Okamoto et al*). Notice that the host 10 acquires operation mode information of the card 20 and then executes a signal assignment on the data pins of the card in accordance with the operation mode information acquired from the card. The signal assignment includes informing the card after the signal assignment that an operation mode of the card can be changed to an operation mode indicated by the operation mode information that is peculiar to the card and which was acquired by the host. Noteworthy in this process is the fact that the acquired operation mode information from the card is directly indicative of the bus width. Nowhere in the *Okamoto et al* reference is it shown, suggested or even hinted at that once the acquired operation mode information is acquired by the host from the card that the information is indirect in nature and must be deciphered to figure out from an indirect indication of the bus width. See claims

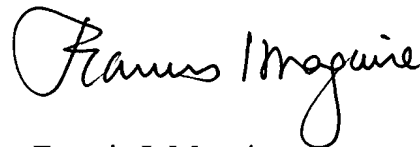
15 and 16 on page 9 of *Okamoto et al.* Therefore, it cannot be seen from this reference either where there is any kind of indirect indication of the bus width formed in the peripheral device.

Regarding the *Hirabayashi et al* reference, the sliding switch 4 shown in Fig. 1 and Figs. 4a and 4b enable the PC card one to directly indicate to the card controller 21 in the host of Fig. 5 whether or not it is in a 16-bit mode or a 32-bit mode by either open-circuiting the pulse provided by the card controller 21 on to the line VS1 or directing that pulse back to the card controller 21 via the line CD1. This is a direct indication not indirect.

Therefore, for the same reasons given in the previous responses, the various novelty rejections are inapplicable and withdrawal thereof is requested.

The objections and rejections of the Office Action of August 22, 2007, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of claims 1-25 to issue is earnestly solicited.

Respectfully submitted,



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